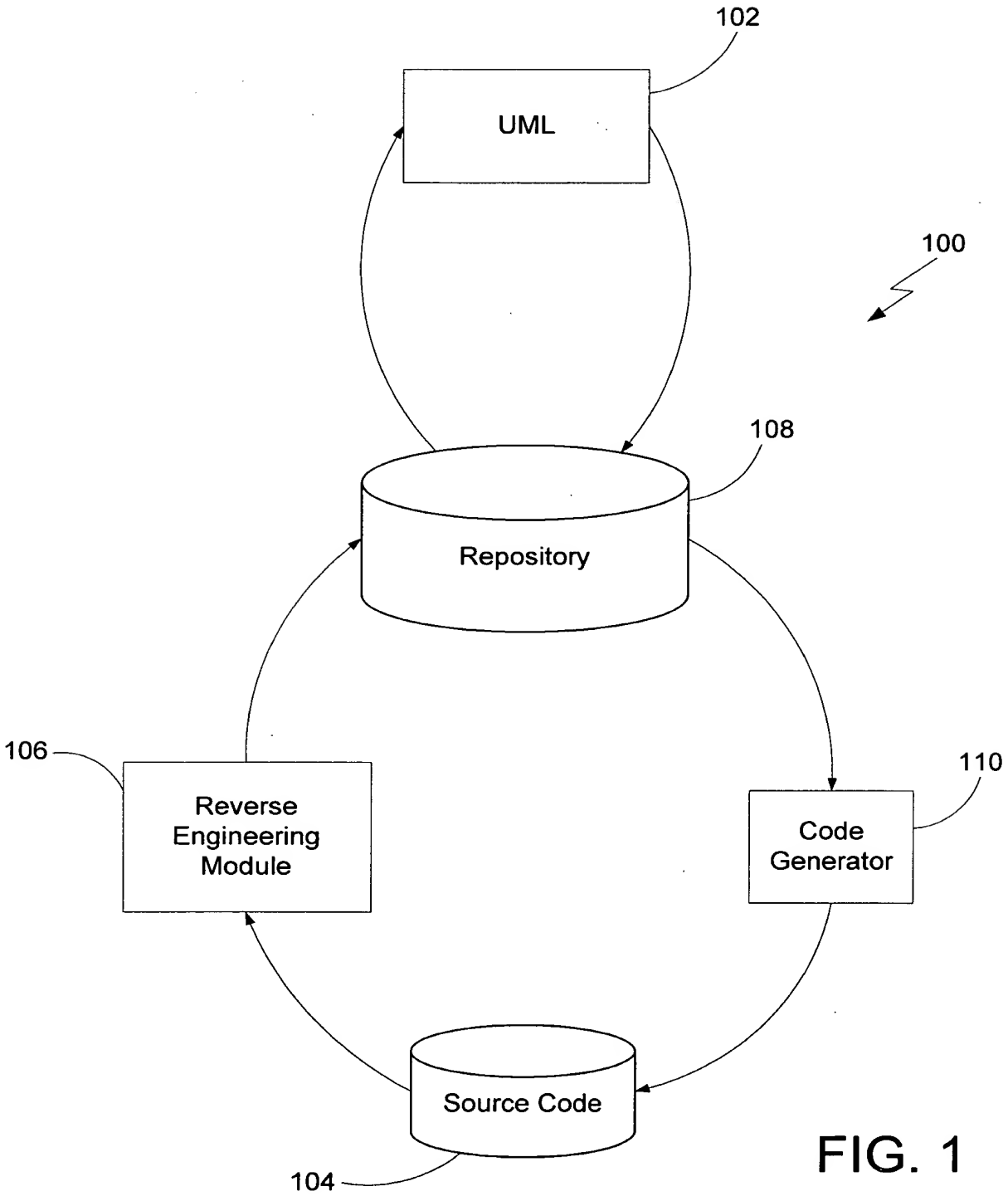

FIG. 1
(Prior Art)

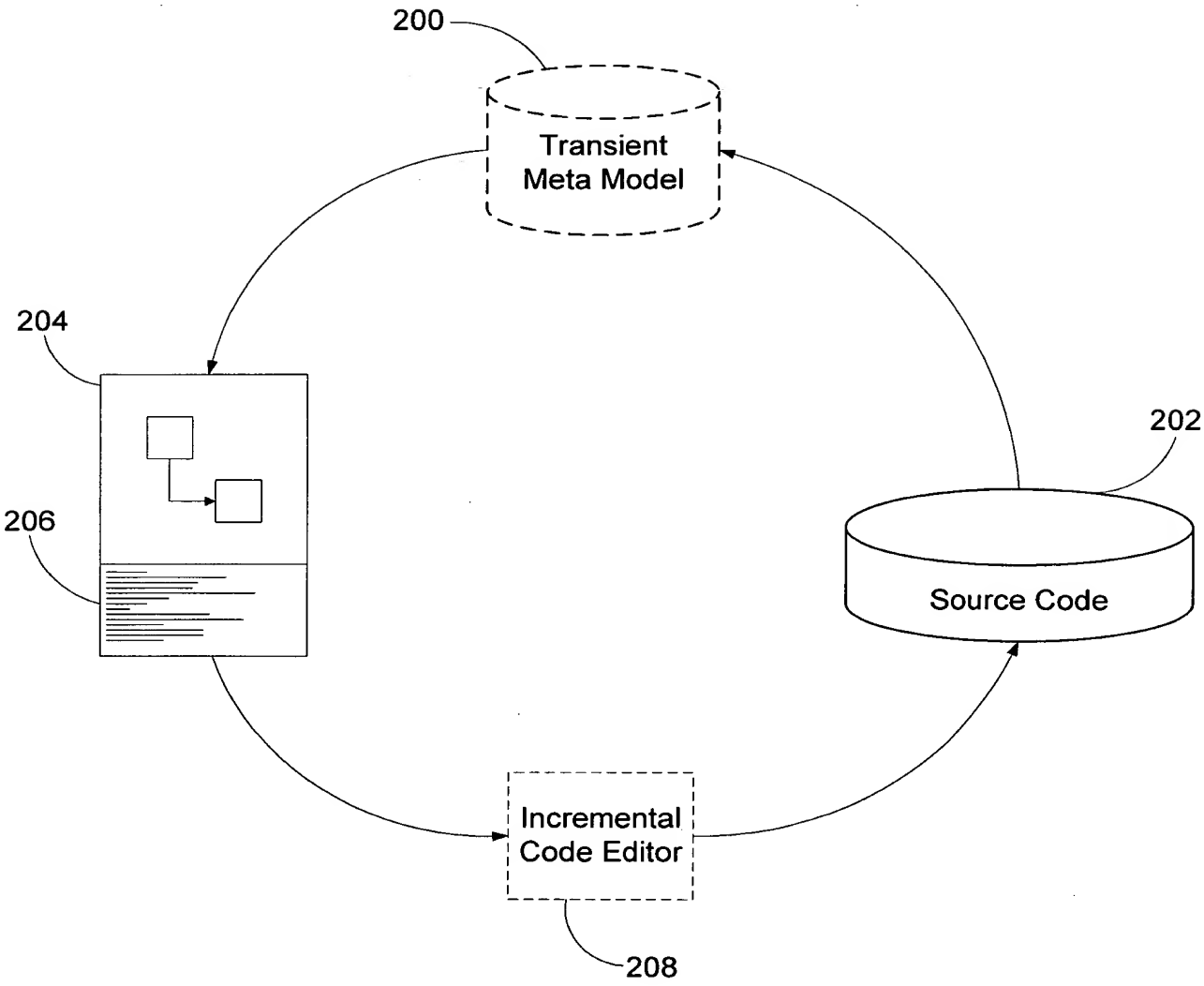
200
Transient
Meta Model
204
206
202
Source Code
Incremental
Code Editor
208

FIG. 2

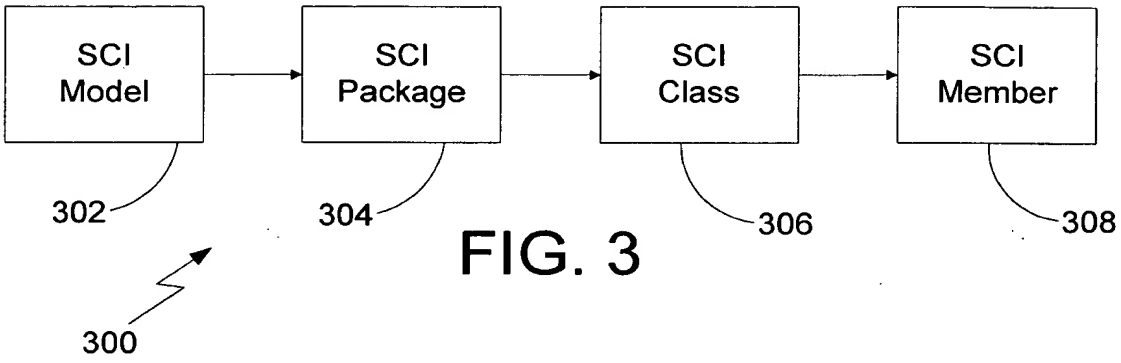

FIG. 3

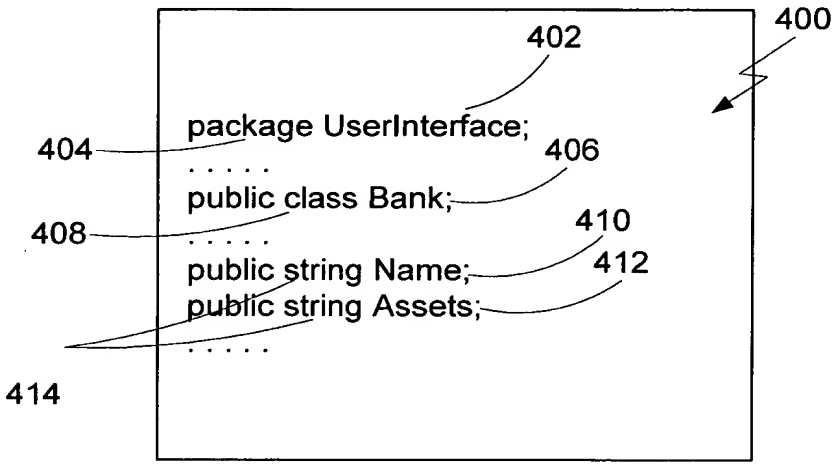

FIG. 4

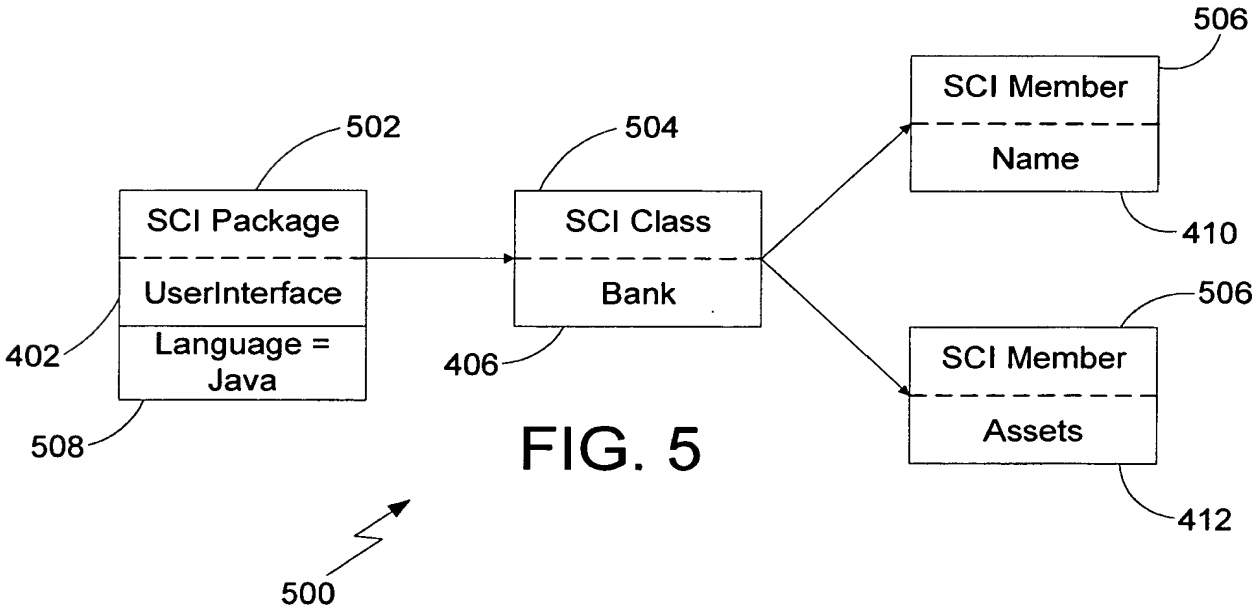

FIG. 5

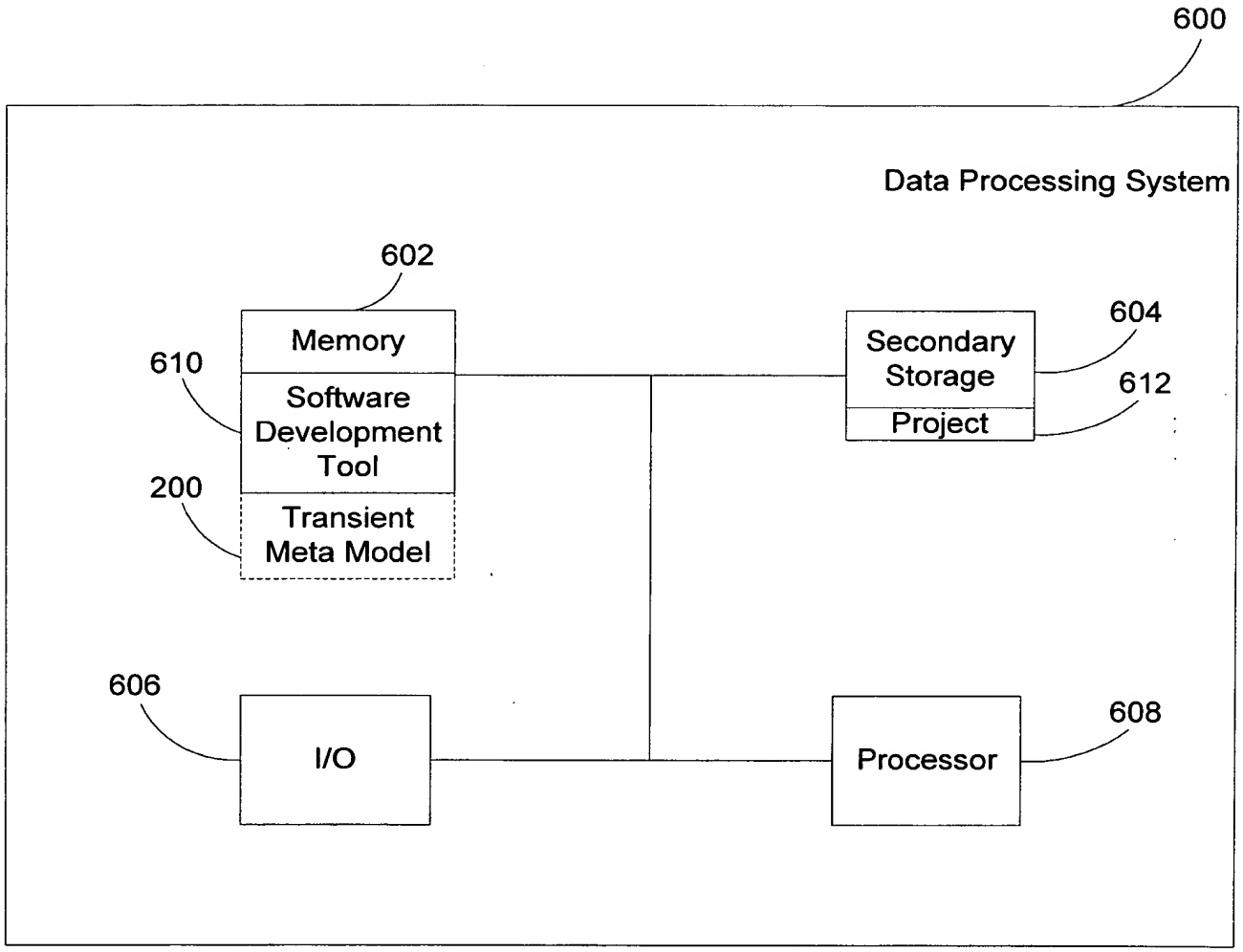
600
Data Processing System
602
Memory
610
Software Development Tool
200
Transient Meta Model
604
Secondary Storage
612
Project
606
I/O
608
Processor

FIG. 6

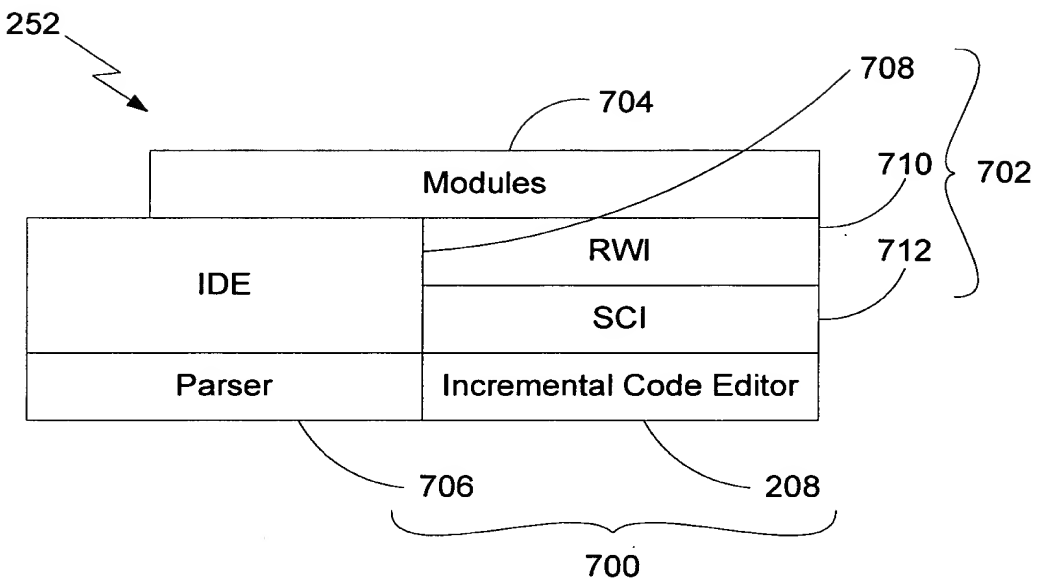
252
708
704
710
702
Modules
IDE
RWI
712
SCI
Parser
Incremental Code Editor
706
208
700

FIG. 7

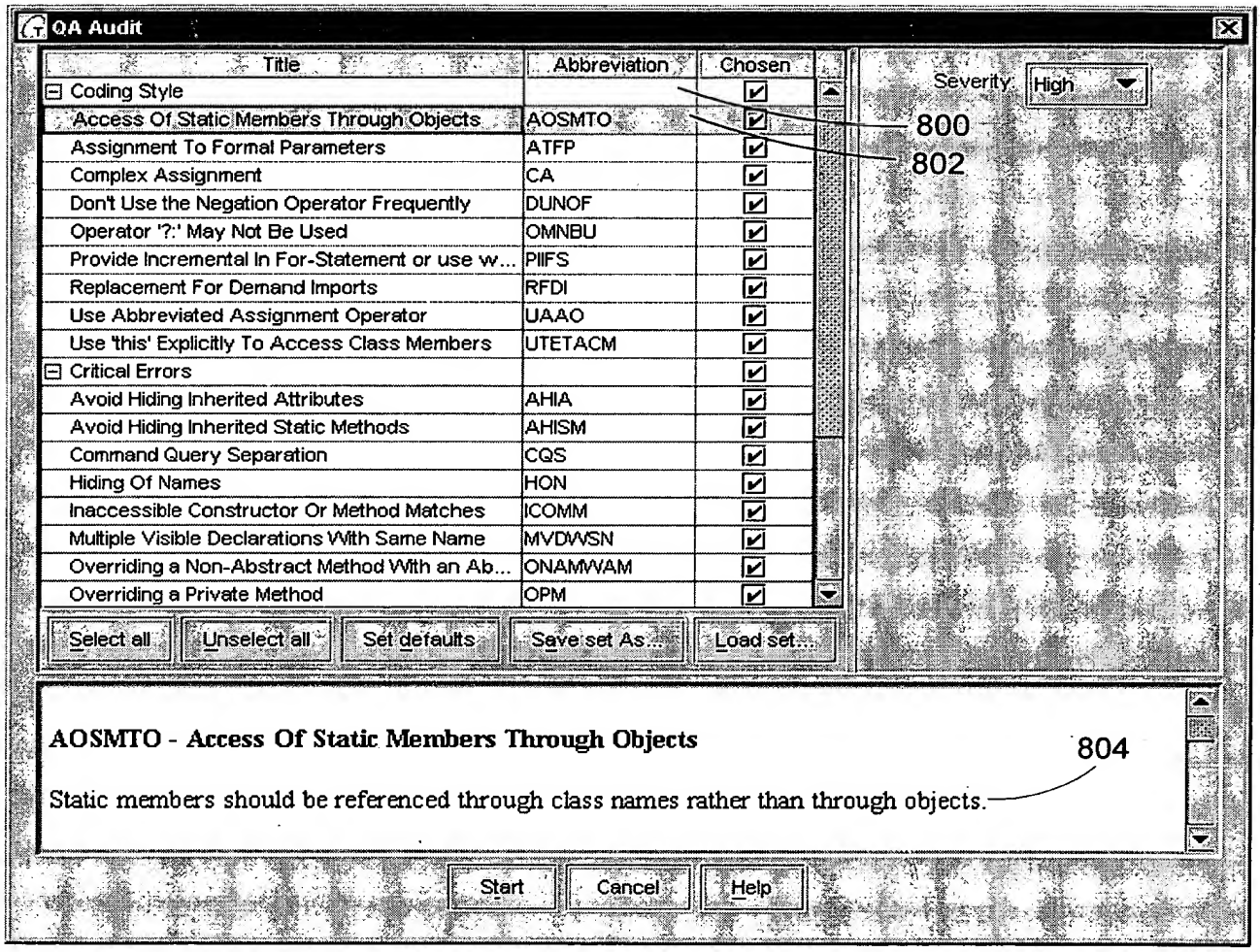
QA Audit
Title
Abbreviation
Chosen
Coding Style
Access Of Static Members Through Objects
AOSMTO
Assignment To Formal Parameters
ATFP
Complex Assignment
CA
Don't Use the Negation Operator Frequently
DUNOF
Operator '?:' May Not Be Used
OMNBU
Provide Incremental In For-Statement or use w...
PIIFS
Replacement For Demand Imports
RFDI
Use Abbreviated Assignment Operator
UAAO
Use 'this' Explicitly To Access Class Members
UTETACM
Critical Errors
Avoid Hiding Inherited Attributes
AHIA
Avoid Hiding Inherited Static Methods
AHISM
Command Query Separation
CQS
Hiding Of Names
HON
Inaccessible Constructor Or Method Matches
ICOMM
Multiple Visible Declarations With Same Name
MVDWSN
Overriding a Non-Abstract Method With an Ab...
ONAMWAM
Overriding a Private Method
OPM
Severity:
High
800
802
Select all
Unselect all
Set defaults
Save set As...
Load set...
AOSMTO - Access Of Static Members Through Objects
804
Static members should be referenced through class names rather than through objects.
Start
Cancel
Help

FIG. 8A

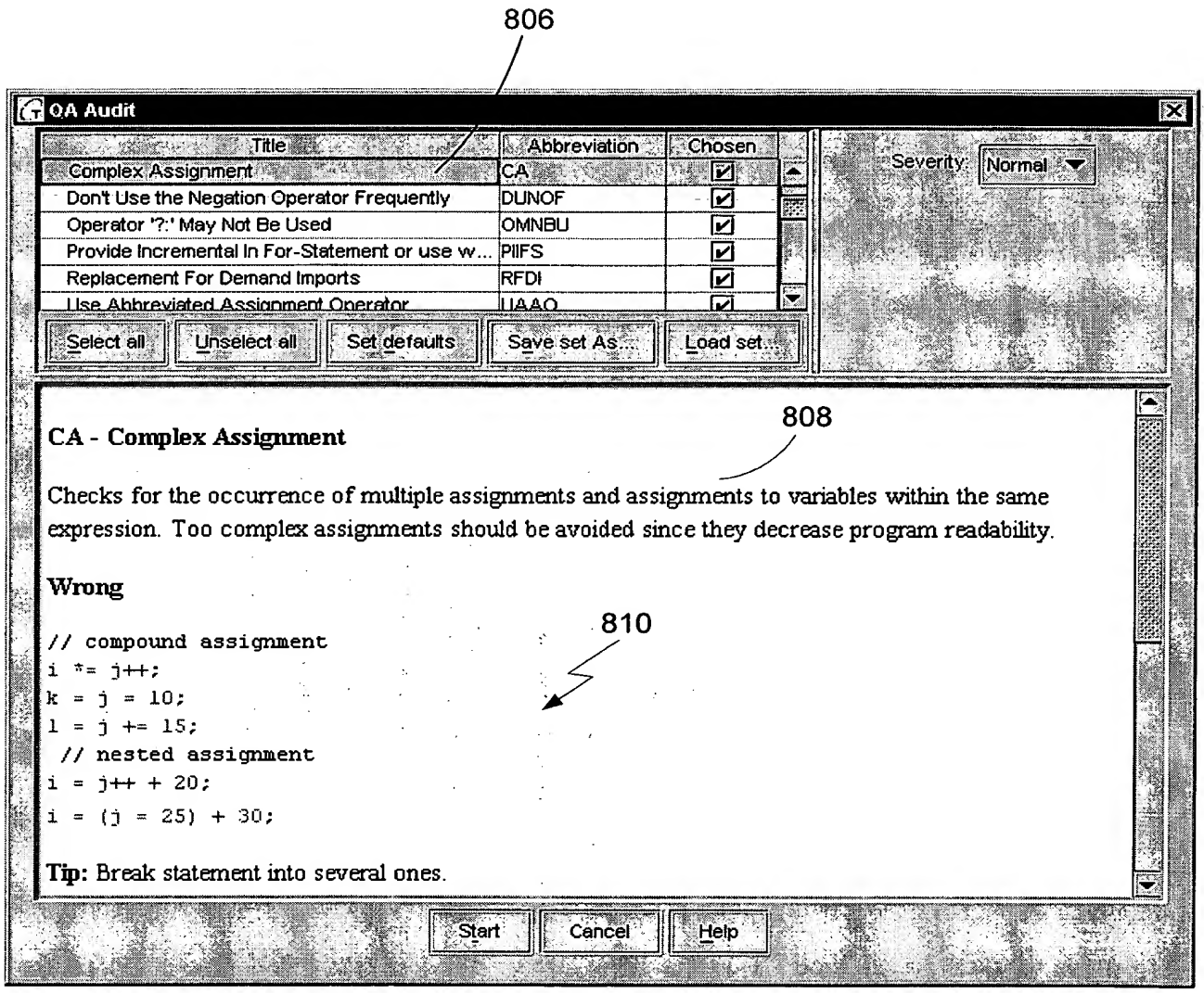
806
QA Audit
Title
Abbreviation
Chosen
Complex Assignment
CA
Don't Use the Negation Operator Frequently
DUNOF
Operator '?:' May Not Be Used
OMNBU
Provide Incremental In For-Statement or use w...
PIIFS
Replacement For Demand Imports
RFDI
Use Abbreviated Assignment Operator
UAAO
Severity:
Normal
Select all
Unselect all
Set defaults
Save set As...
Load set...
808
CA - Complex Assignment
Checks for the occurrence of multiple assignments and assignments to variables within the same expression. Too complex assignments should be avoided since they decrease program readability.
Wrong
810
// compound assignment
i *= j++;
k = j = 10;
l = j += 15;
// nested assignment
i = j++ + 20;
i = (j = 25) + 30;
Tip: Break statement into several ones.
Start
Cancel
Help

FIG. 8B

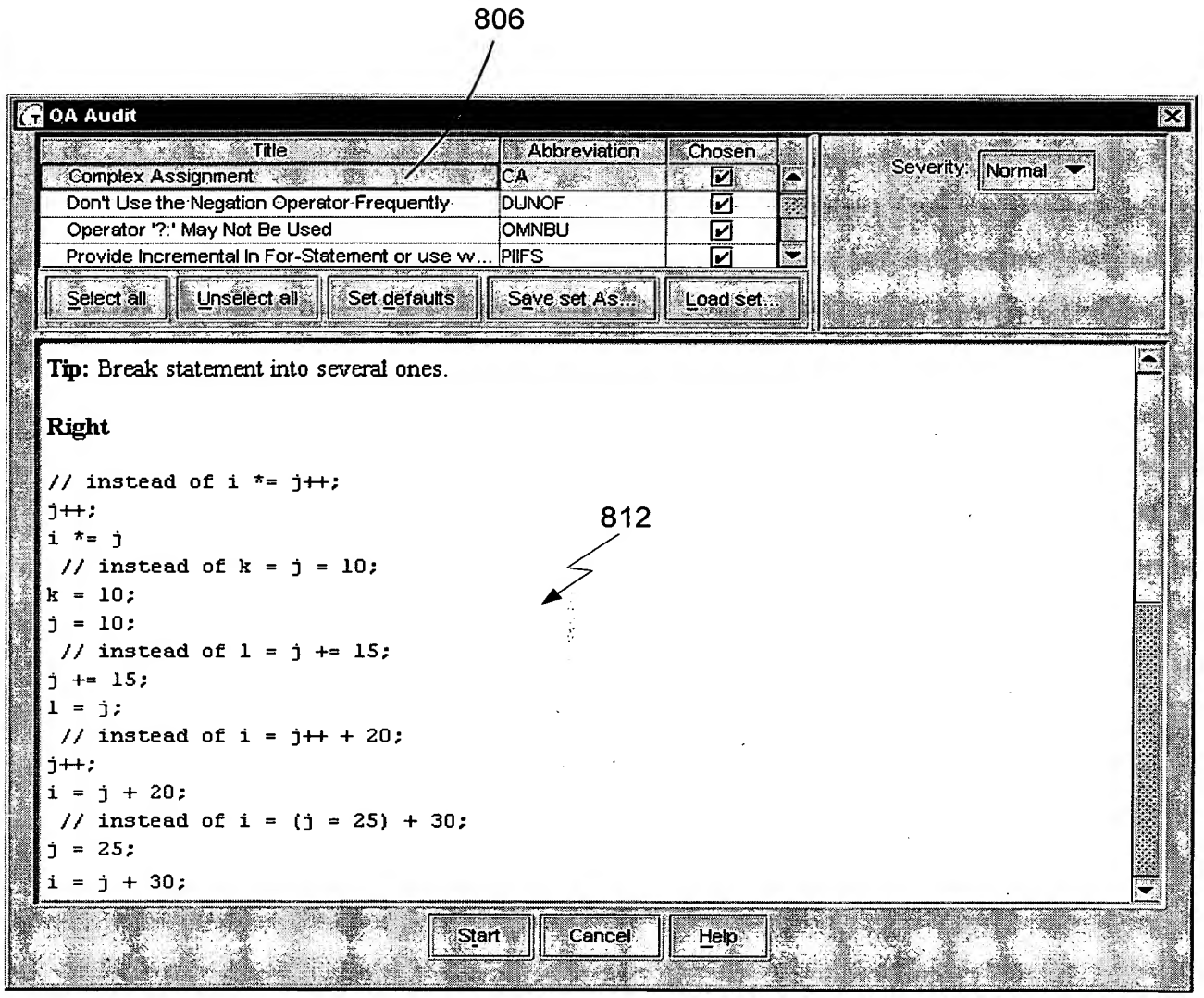
806
QA Audit
Title
Abbreviation
Chosen
Complex Assignment
CA
Don't Use the Negation Operator Frequently
DUNOF
Operator '?:' May Not Be Used
OMNBU
Provide Incremental In For-Statement or use w...
PIIFS
Severity:
Normal
Select all
Unselect all
Set defaults
Save set As...
Load set...
Tip: Break statement into several ones.
Right
// instead of i *= j++;
j++;
i *= j
// instead of k = j = 10;
k = 10;
j = 10;
// instead of l = j += 15;
j += 15;
l = j;
// instead of i = j++ + 20;
j++;
i = j + 20;
// instead of i = (j = 25) + 30;
j = 25;
i = j + 30;
812
Start
Cancel
Help

FIG. 8C

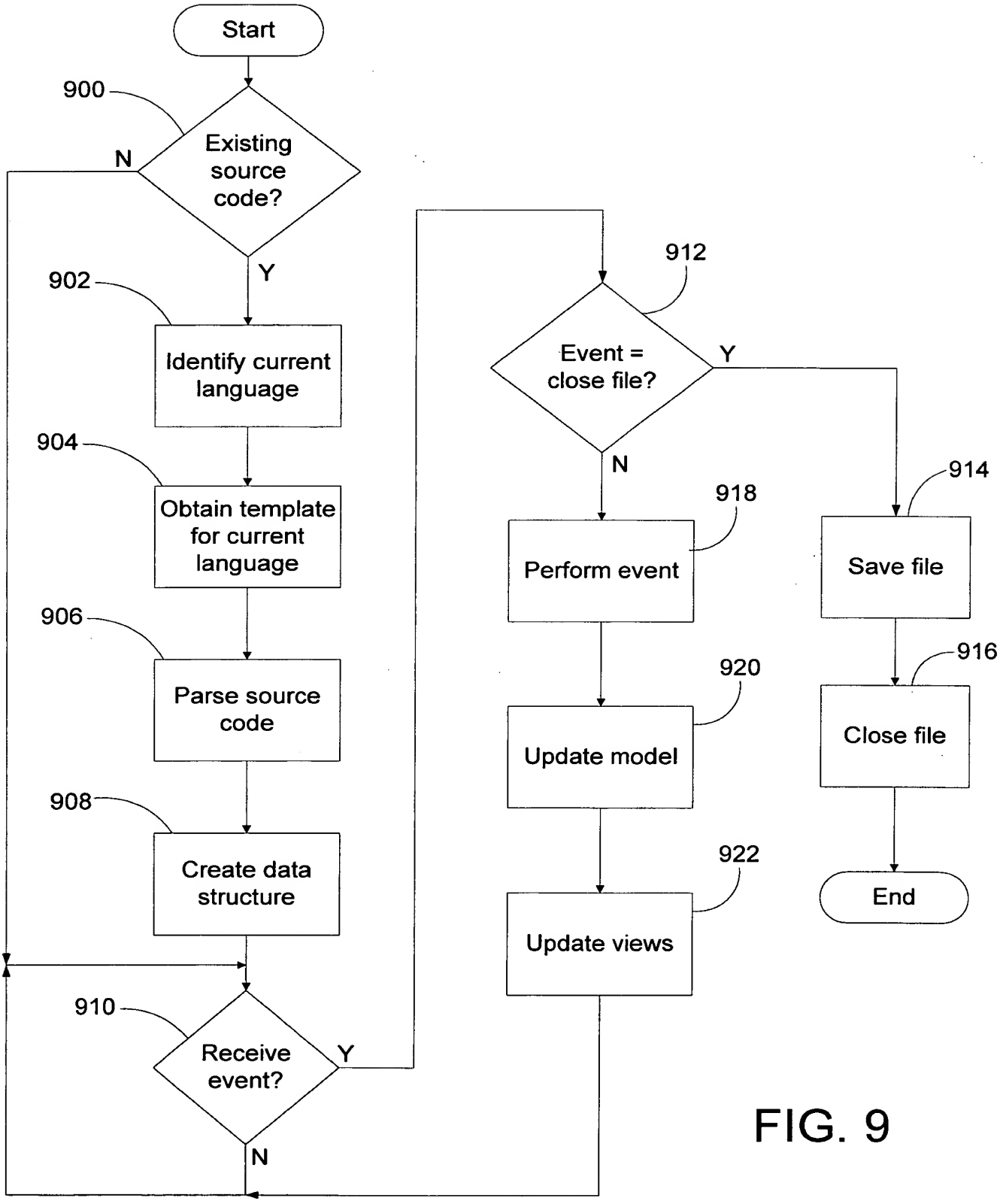
Start
900
Existing source code?
N
Y
902
Identify current language
904
Obtain template for current language
906
Parse source code
908
Create data structure
910
Receive event?
Y
N
912
Event = close file?
Y
N
914
Save file
916
Close file
End
918
Perform event
920
Update model
922
Update views

FIG. 9

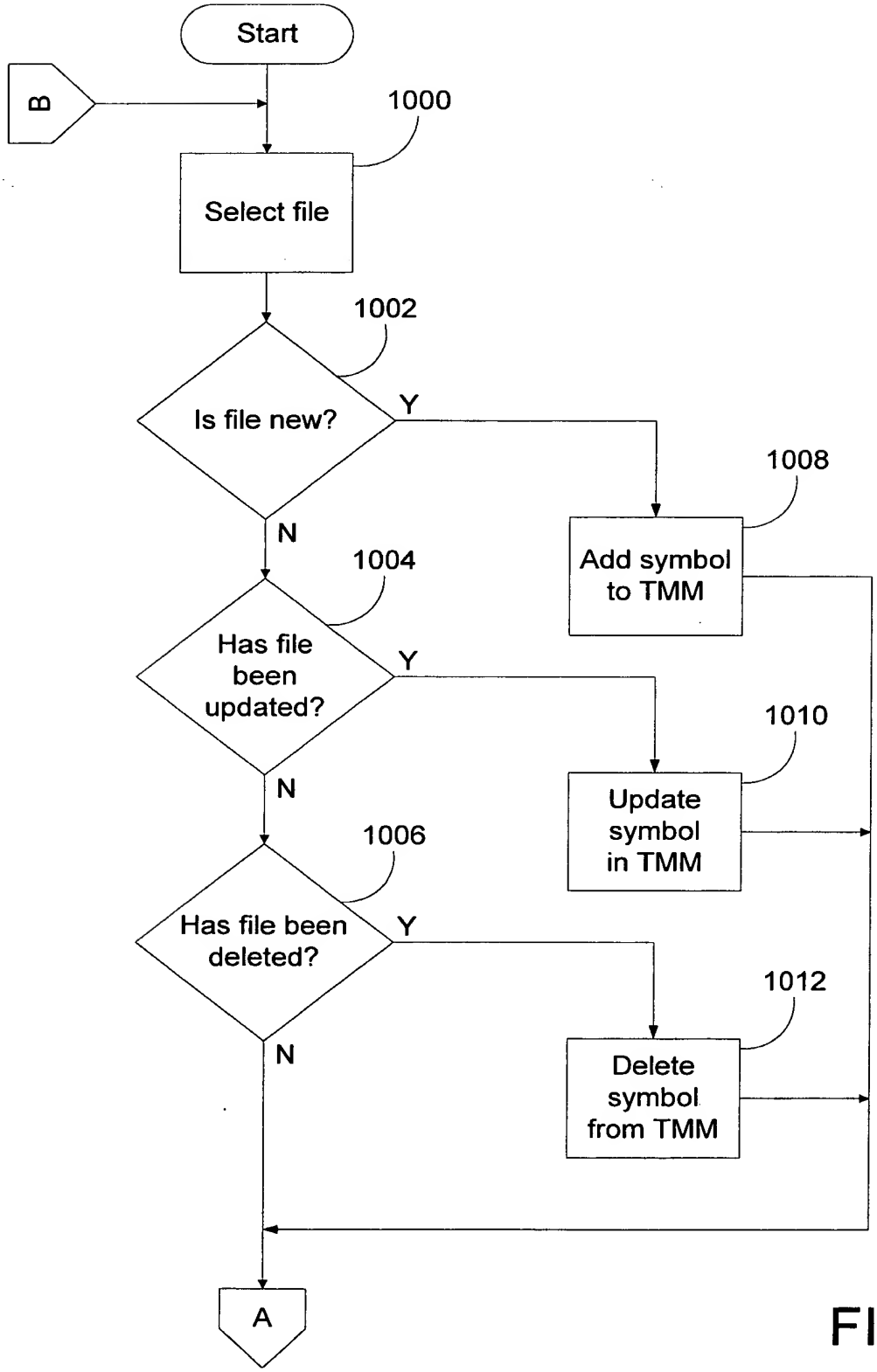
Start
B
1000
Select file
1002
Is file new?
Y
N
1008
Add symbol to TMM
1004
Has file been updated?
Y
N
1010
Update symbol in TMM
1006
Has file been deleted?
Y
N
1012
Delete symbol from TMM
A

FIG. 10A

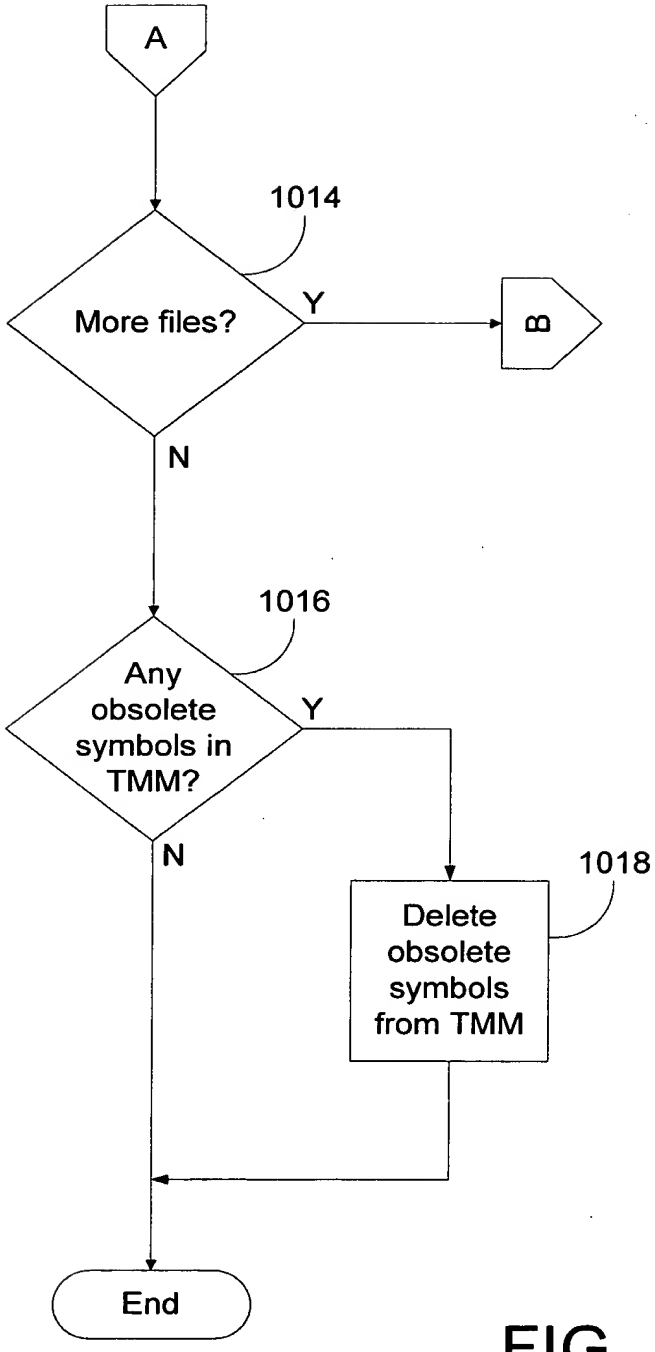
A
1014
More files?
Y
B
N
1016
Any obsolete symbols in TMM?
Y
N
1018
Delete obsolete symbols from TMM
End

FIG. 10B

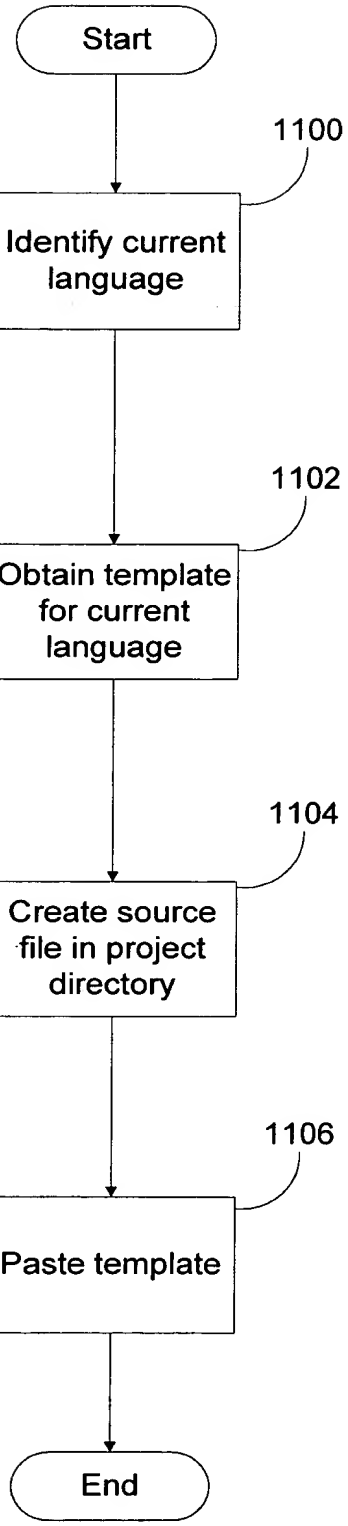
Start
1100
Identify current language
1102
Obtain template for current language
1104
Create source file in project directory
1106
Paste template
End

FIG. 11

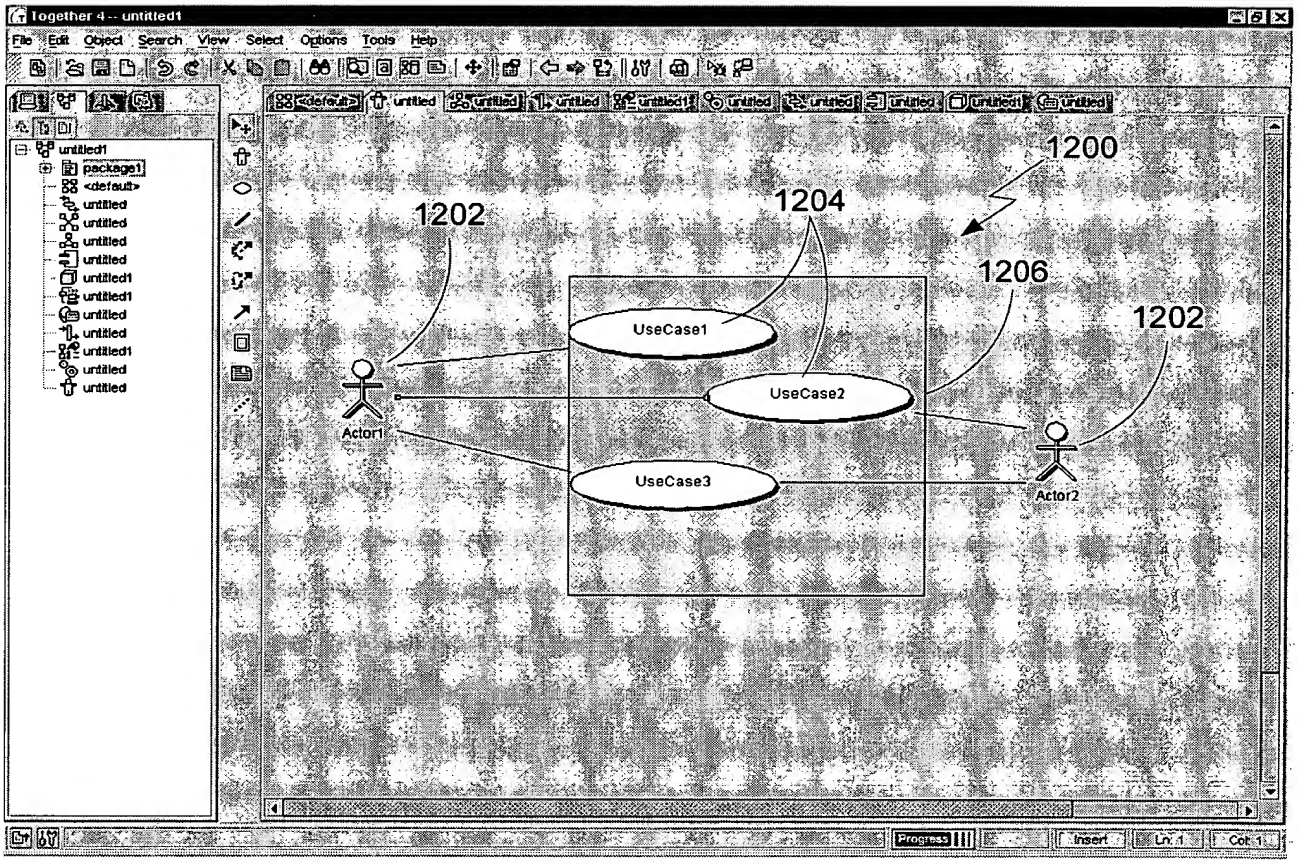
Together 4 -- untitled1
File Edit Object Search View Select Options Tools Help
untitled1
package1
<default>
untitled
untitled1
untitled
untitled
untitled
untitled
untitled1
untitled
untitled1
untitled
untitled
1200
1202
1204
1206
1202
UseCase1
UseCase2
UseCase3
Actor1
Actor2
Progress
Insert
Ln 1
Col 1

FIG. 12

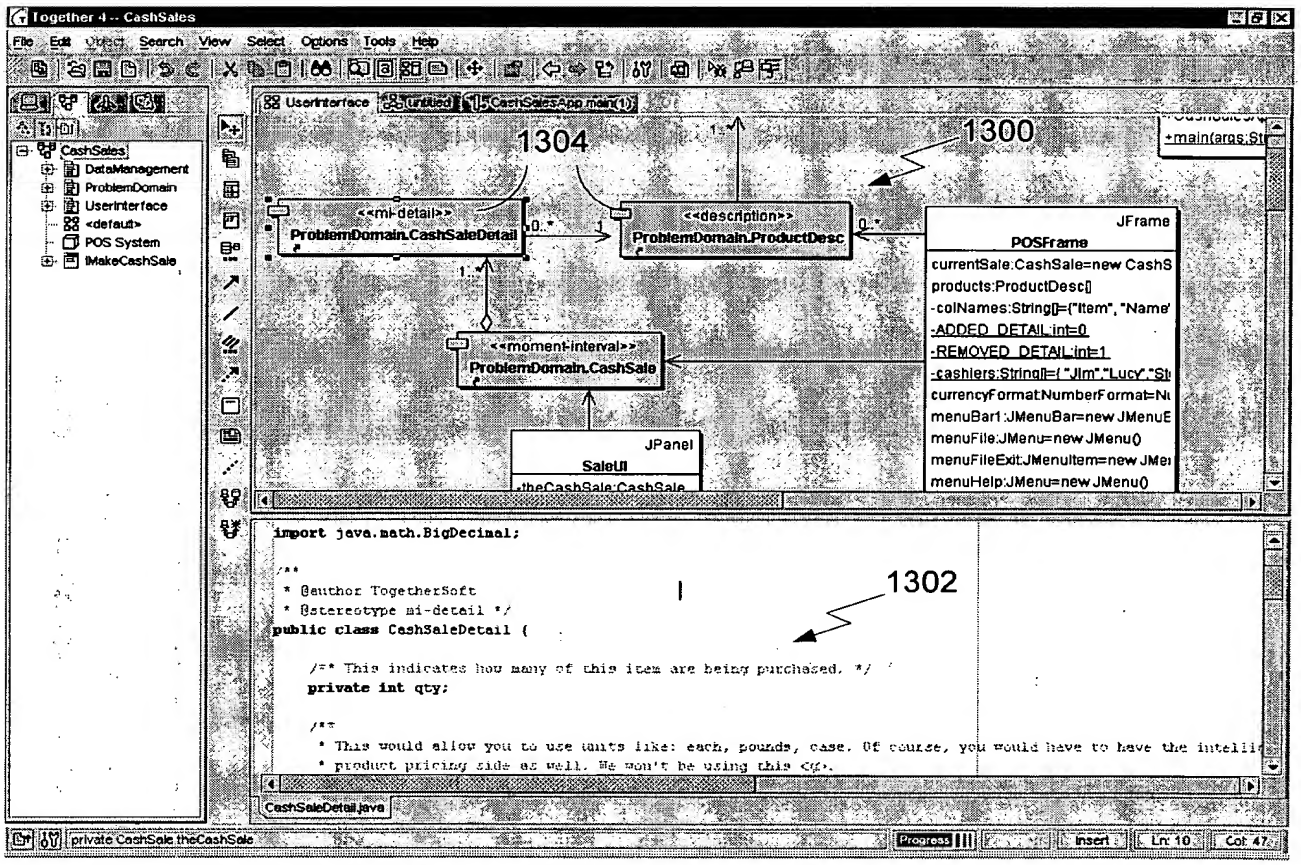
Together 4 -- CashSales
File Edit Project Search View Select Options Tools Help
CashSales
DataManagement
ProblemDomain
UserInterface
<default>
POS System
MakeCashSale
UserInterface
1304
1300
<<mi-detail>>
ProblemDomain.CashSaleDetail
<<description>>
ProblemDomain.ProductDesc
JFrame
POSFrame
currentSale:CashSale=new CashS
products:ProductDesc[]
-colNames:String[]={"Item","Name
-ADDED_DETAIL:int=0
-REMOVED_DETAIL:int=1
currencyFormat:NumberFormat=N
menuBar1:JMenuBar=new JMenuB
menuFile:JMenu=new JMenu()
menuFileExit:JMenuItem=new JMe
menuHelp:JMenu=new JMenu()
<<moment-interval>>
ProblemDomain.CashSale
JPanel
SaleUI
1302
import java.math.BigDecimal;
@author TogetherSoft
@stereotype mi-detail
public class CashSaleDetail {
/** This indicates how many of this item are being purchased. */
private int qty;
CashSaleDetail.java
private CashSale theCashSale
Insert
Ln 10
Col 47

FIG. 13

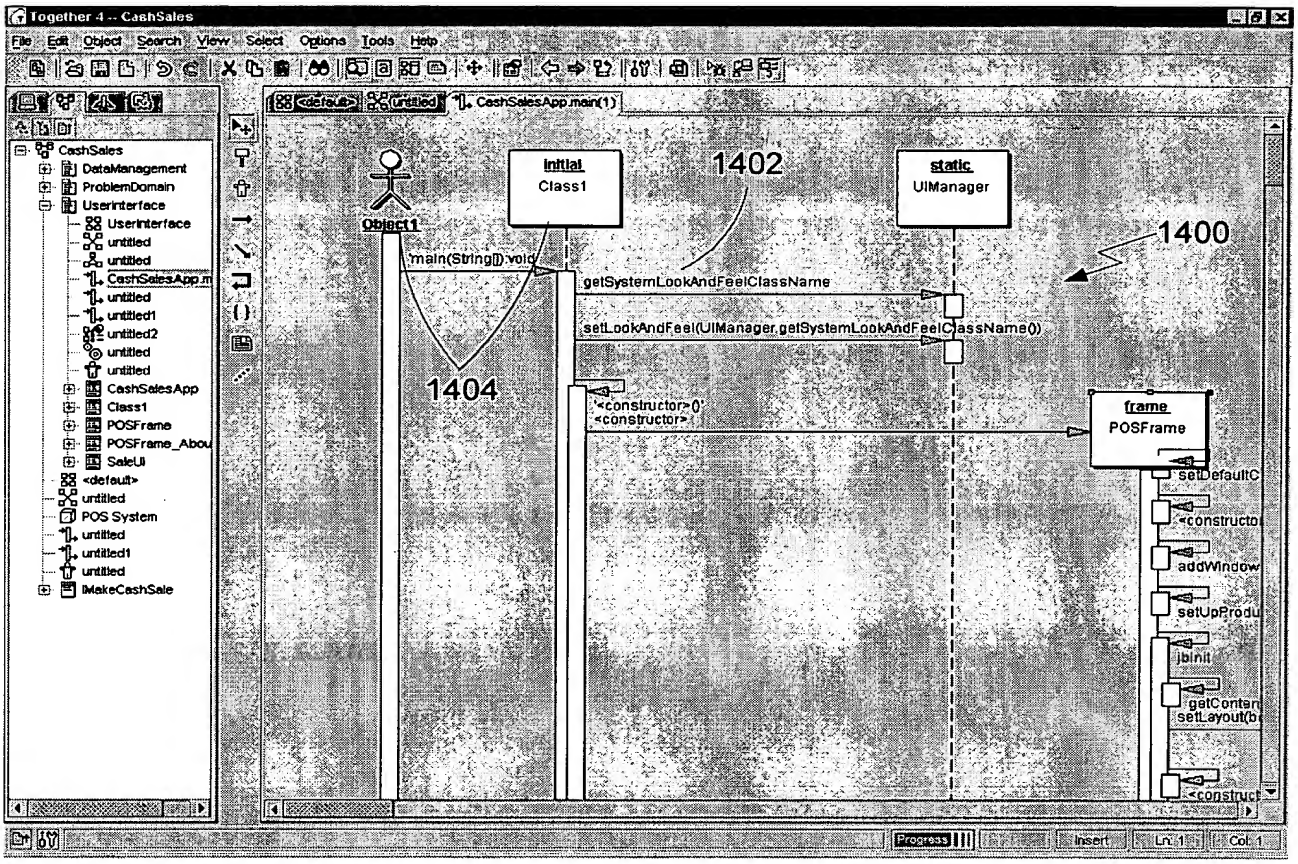
Together 4 -- CashSales
File Edit Object Search View Select Options Tools Help
CashSales
DataManagement
ProblemDomain
UserInterface
UserInterface
untitled
untitled
CashSalesApp.m
untitled
untitled1
untitled2
untitled
untitled
CashSalesApp
Class1
POSFrame
POSFrame_Abou
SaleUI
<default>
untitled
POS System
untitled
untitled1
untitled
IMakeCashSale
<default>
untitled
CashSalesApp.main(1)
initial
Class1
1402
static
UIManager
1400
Object1
main(String[]):void
getSystemLookAndFeelClassName
setLookAndFeel(UIManager.getSystemLookAndFeelClassName())
1404
<constructor>()
<constructor>
frame
POSFrame
setDefaultC
<constructo
addWindow
setUpProdu
jbinit
getConten
setLayout(b
<construct
Progress
Insert
Ln 1
Col 1

FIG. 14

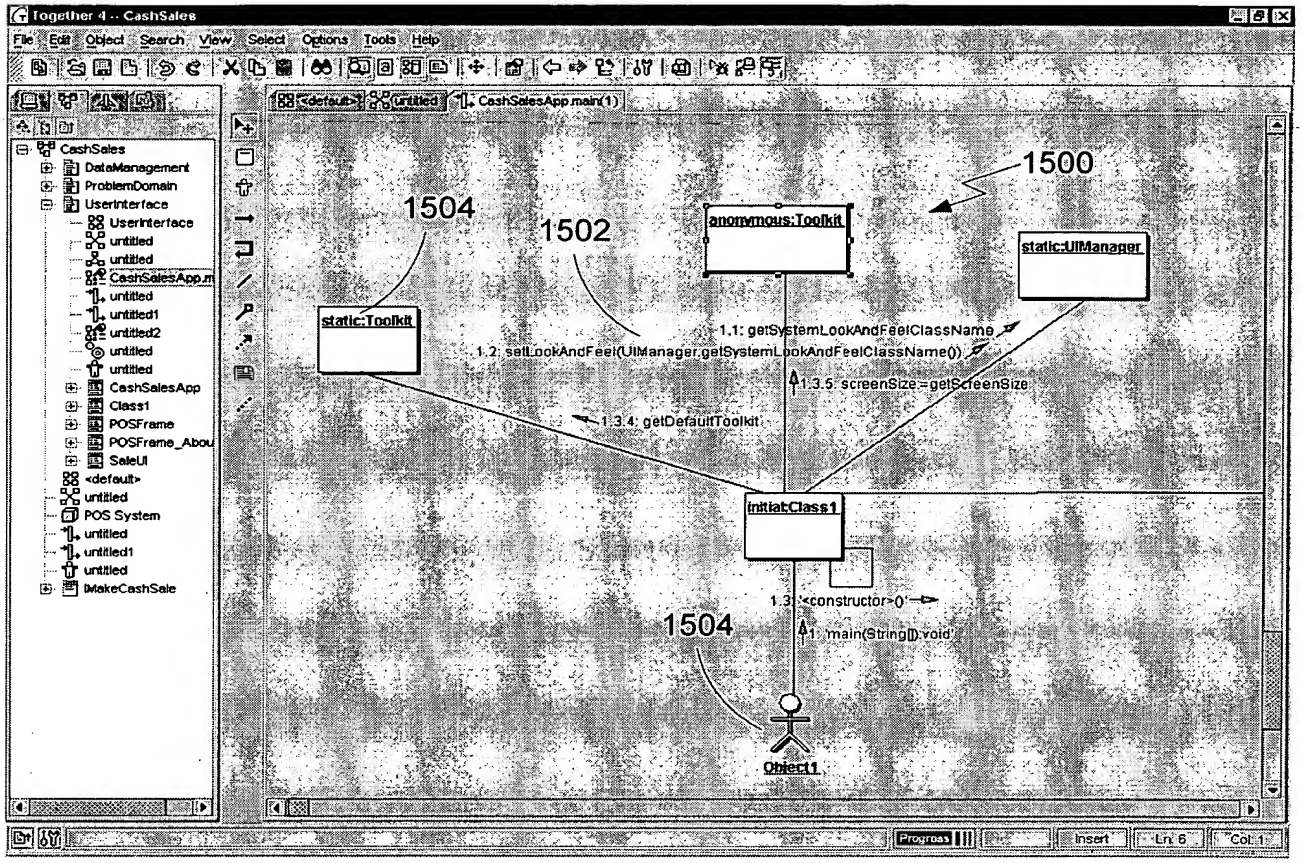
Together 4 -- CashSales
File Edit Object Search View Select Options Tools Help
CashSales
DataManagement
ProblemDomain
UserInterface
UserInterface
untitled
untitled
CashSalesApp.m
untitled
untitled1
untitled2
untitled
untitled
CashSalesApp
Class1
POSFrame
POSFrame_Abou
SaleUI
«default»
untitled
POS System
untitled
untitled1
untitled
MakeCashSale
«default»
untitled
CashSalesApp.main(1)
1500
1504
1502
anonymous:Toolkit
static:UIManager
static:Toolkit
1.1: getSystemLookAndFeelClassName
1.2: setLookAndFeel(UIManager.getSystemLookAndFeelClassName())
1.3.5: screenSize = getScreenSize
1.3.4: getDefaultToolkit
initialClass1
1.3: <constructor>()
1: 'main(String[]):void'
1504
Object1
Progress
Insert
Ln: 6
Col: 1

FIG. 15

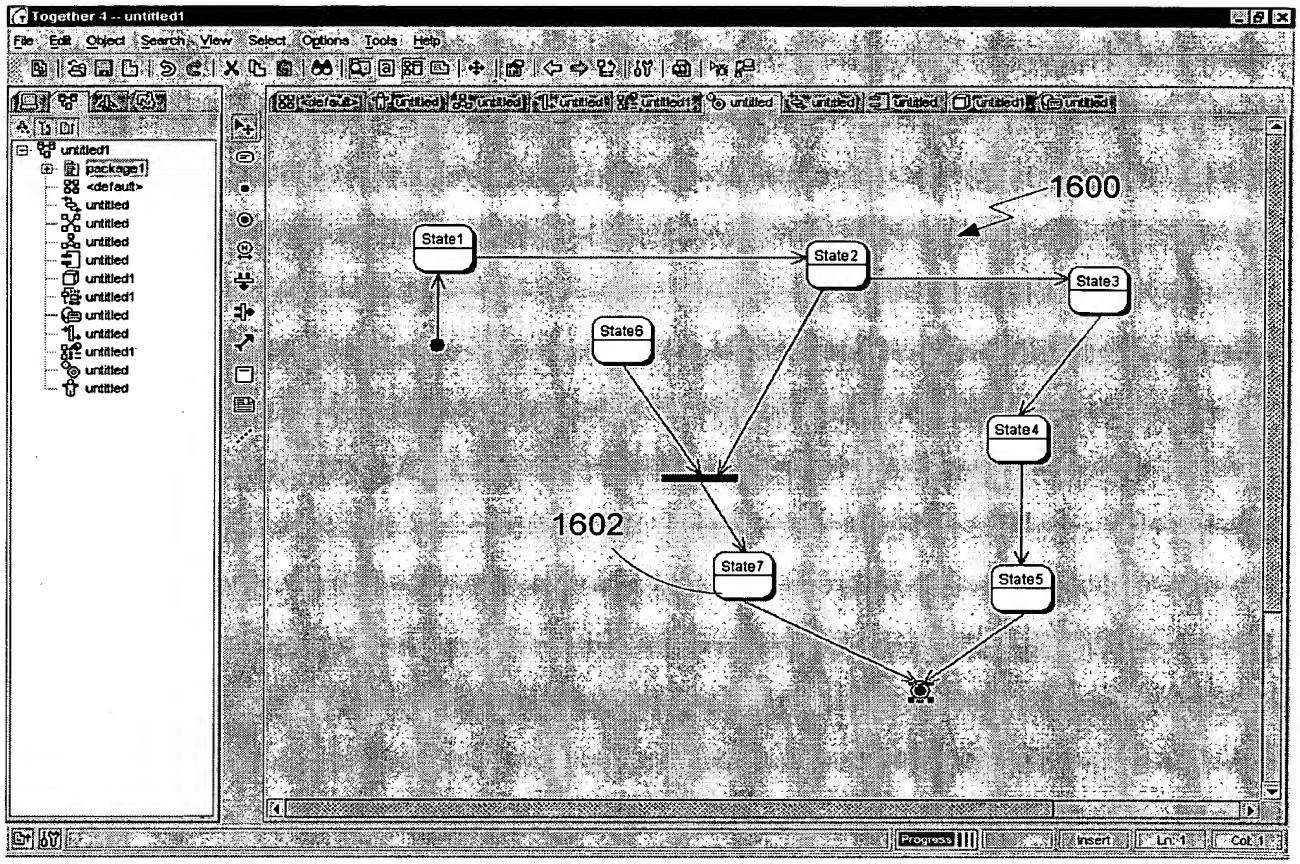
Together 4 -- untitled1
File Edit Object Search View Select Options Tools Help
untitled1
package1
<default>
1600
State1
State2
State3
State4
State5
State6
State7
1602
Progress
Insert
Ln 1
Col 1

FIG. 16

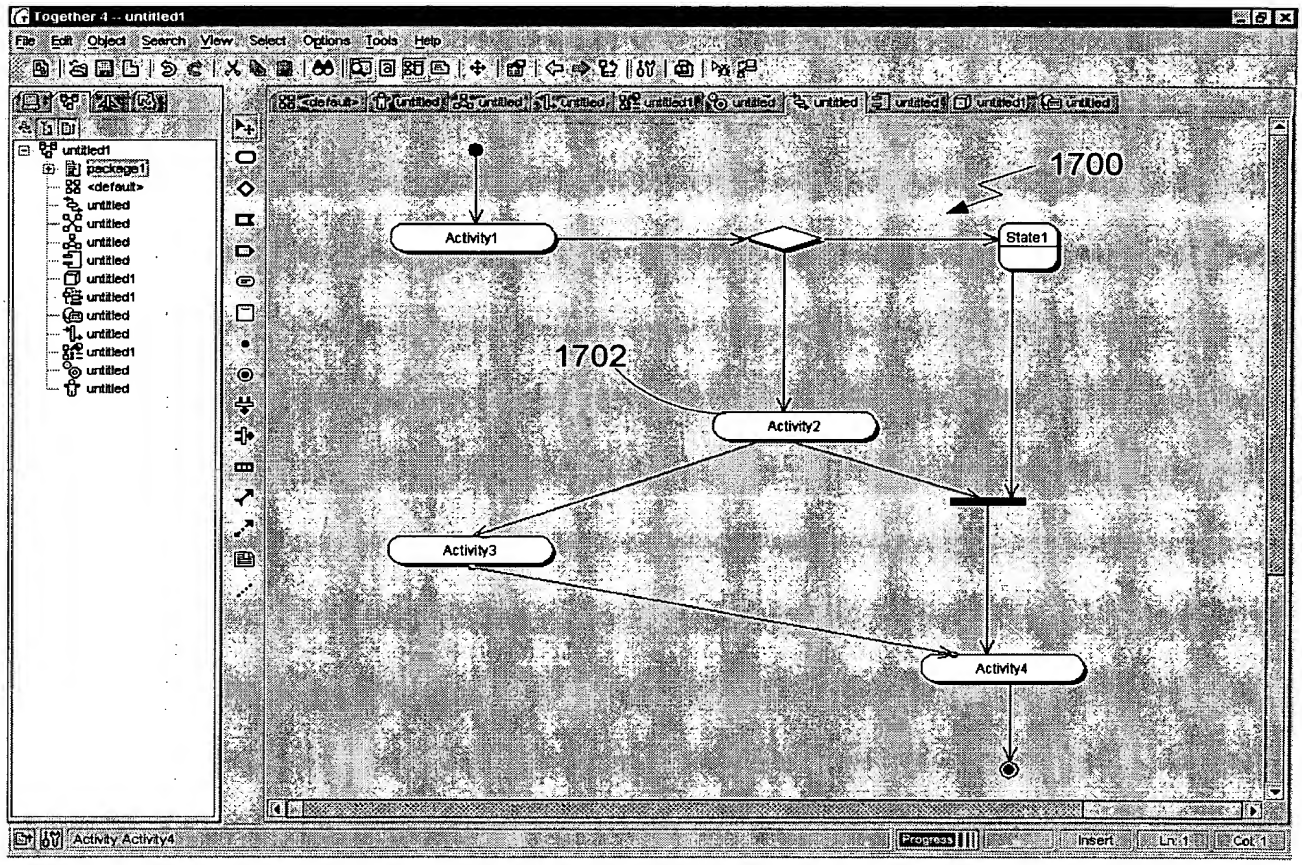
Together 4 -- untitled1
File Edit Object Search View Select Options Tools Help
untitled1
package1
<default>
1700
Activity1
State1
1702
Activity2
Activity3
Activity4
Activity Activity4
Progress
Insert
Ln 1
Col 1

FIG. 17

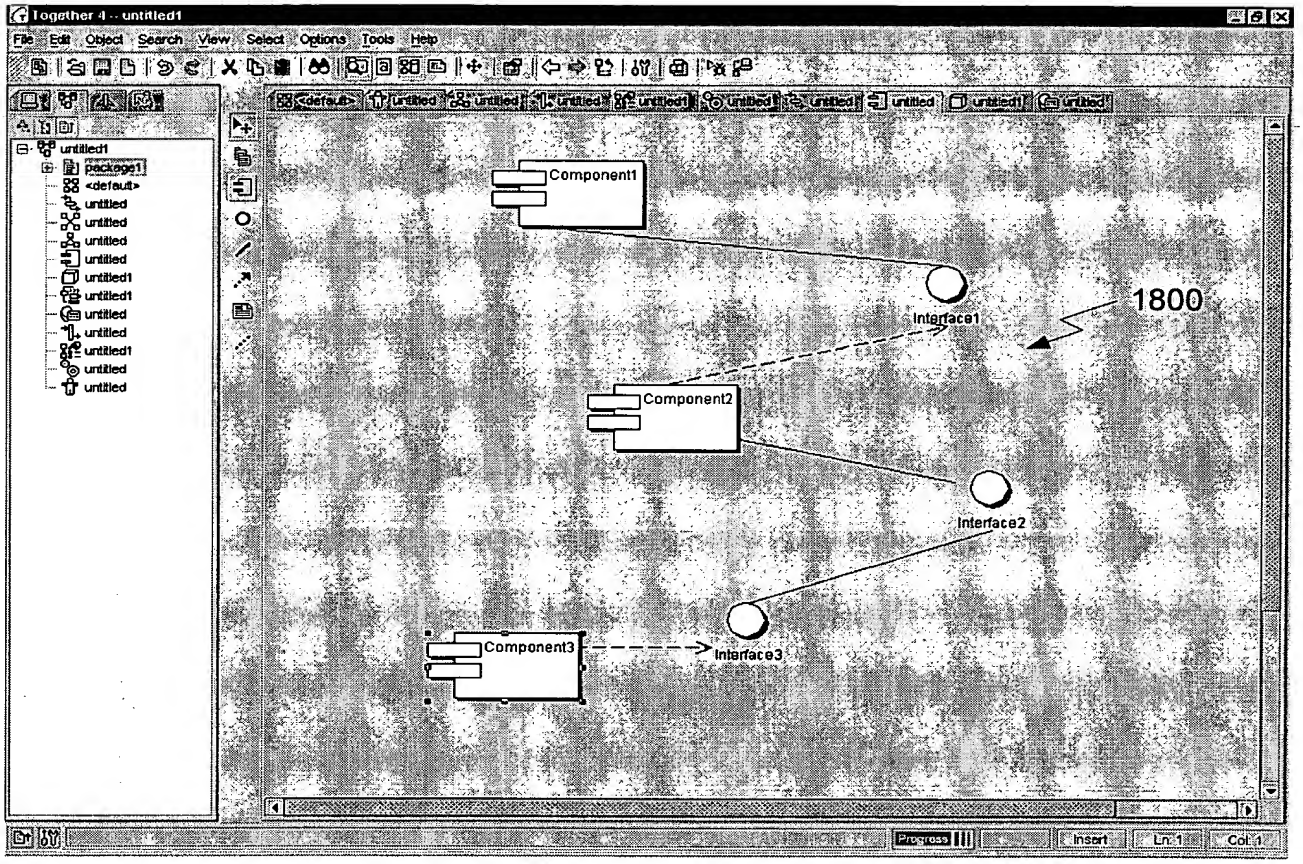
Together 4 -- untitled1
File Edit Object Search View Select Options Tools Help
untitled1
package1
<default>
untitled
untitled1
Component1
Interface1
1800
Component2
Interface2
Component3
Interface3
Progress
Insert
Ln 1
Col 1

FIG. 18

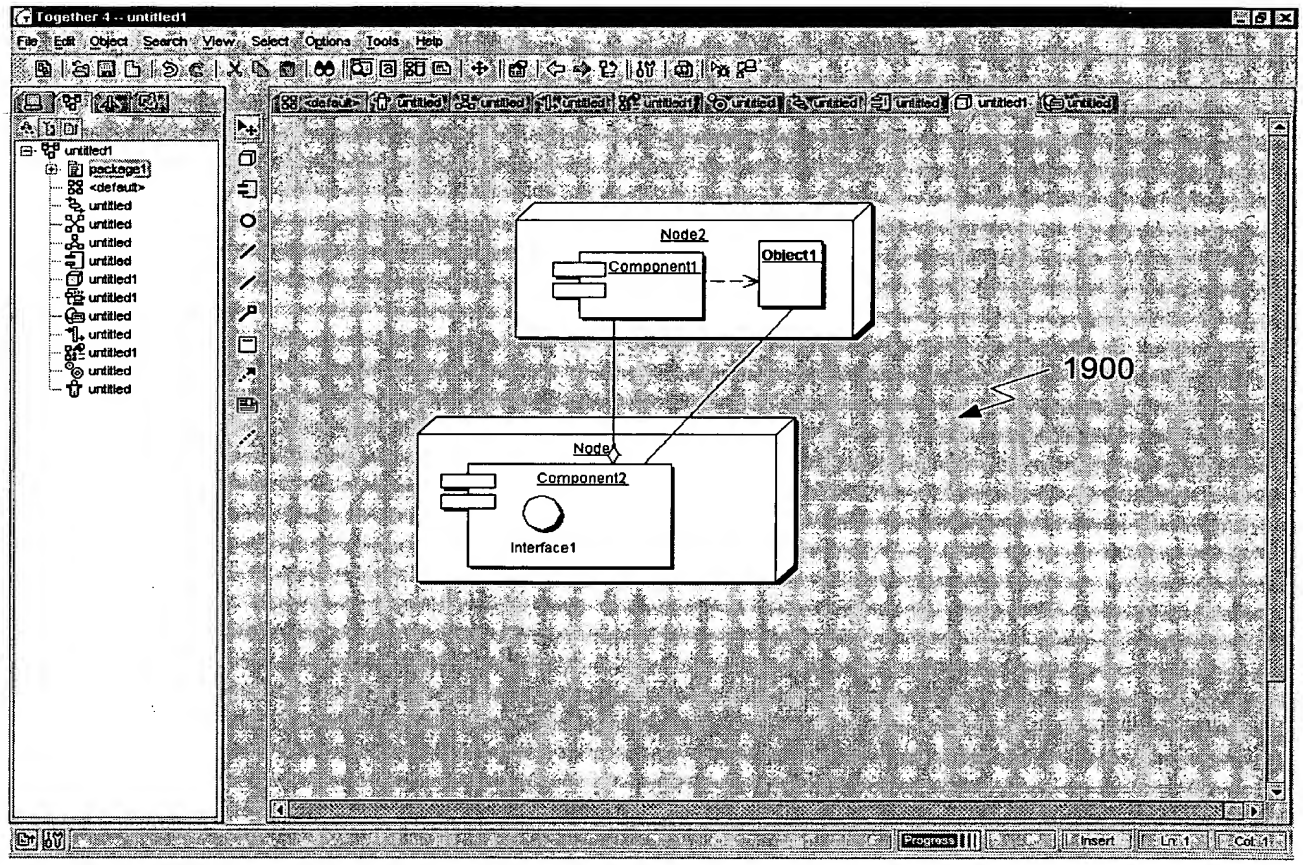
Together 4 -- untitled1
File Edit Object Search View Select Options Tools Help
untitled1
package1
<default>
Node2
Component1
Object1
1900
Node
Component2
Interface1
Progress
Insert

FIG. 19

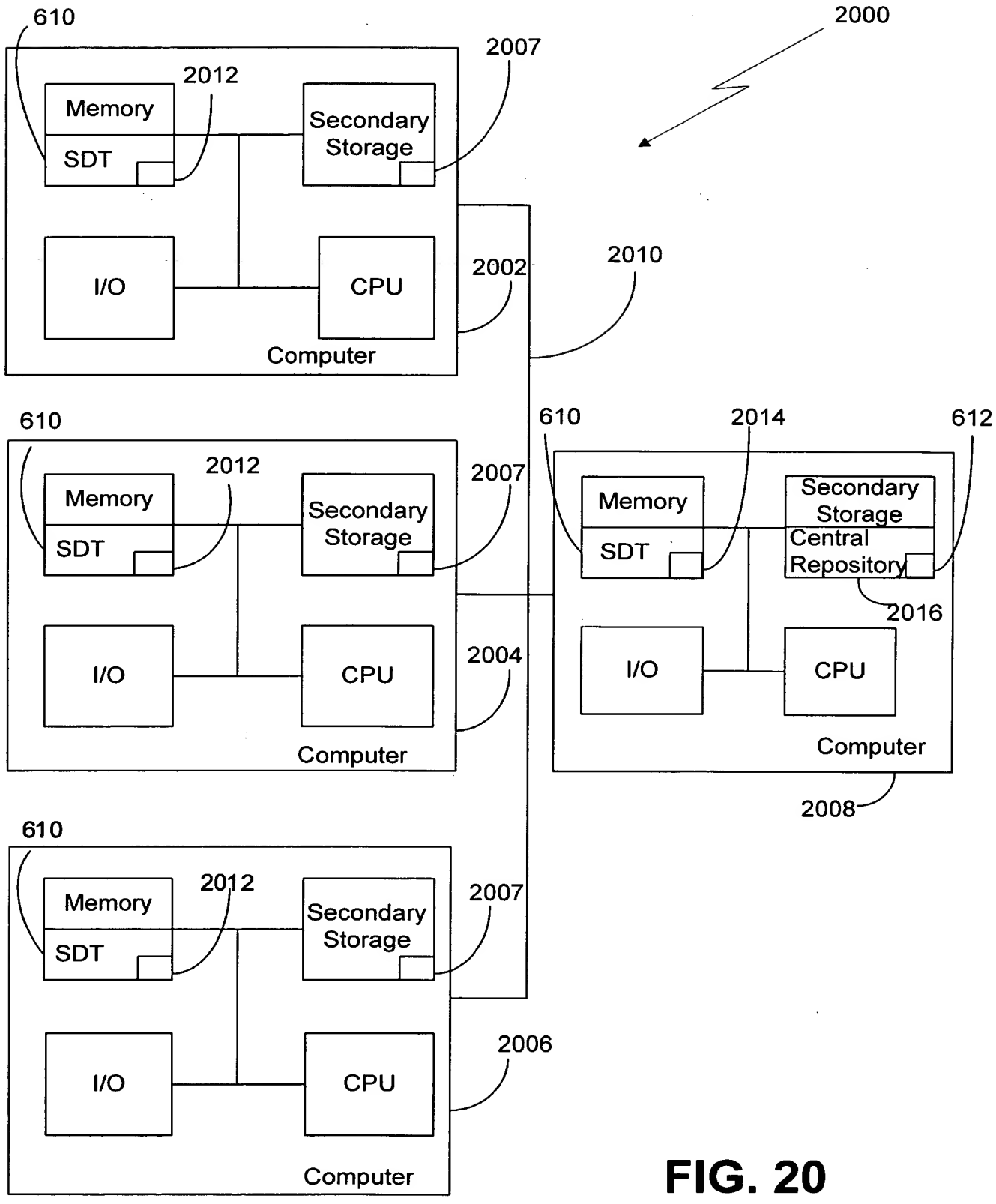
610
2000
2007
2012
Memory
SDT
Secondary Storage
I/O
CPU
2002
2010
Computer
610
2012
2007
Memory
SDT
Secondary Storage
I/O
CPU
2004
Computer
610
2014
612
Memory
SDT
Secondary Storage
Central Repository
2016
I/O
CPU
Computer
2008
610
2012
2007
Memory
SDT
Secondary Storage
I/O
CPU
2006
Computer

FIG. 20

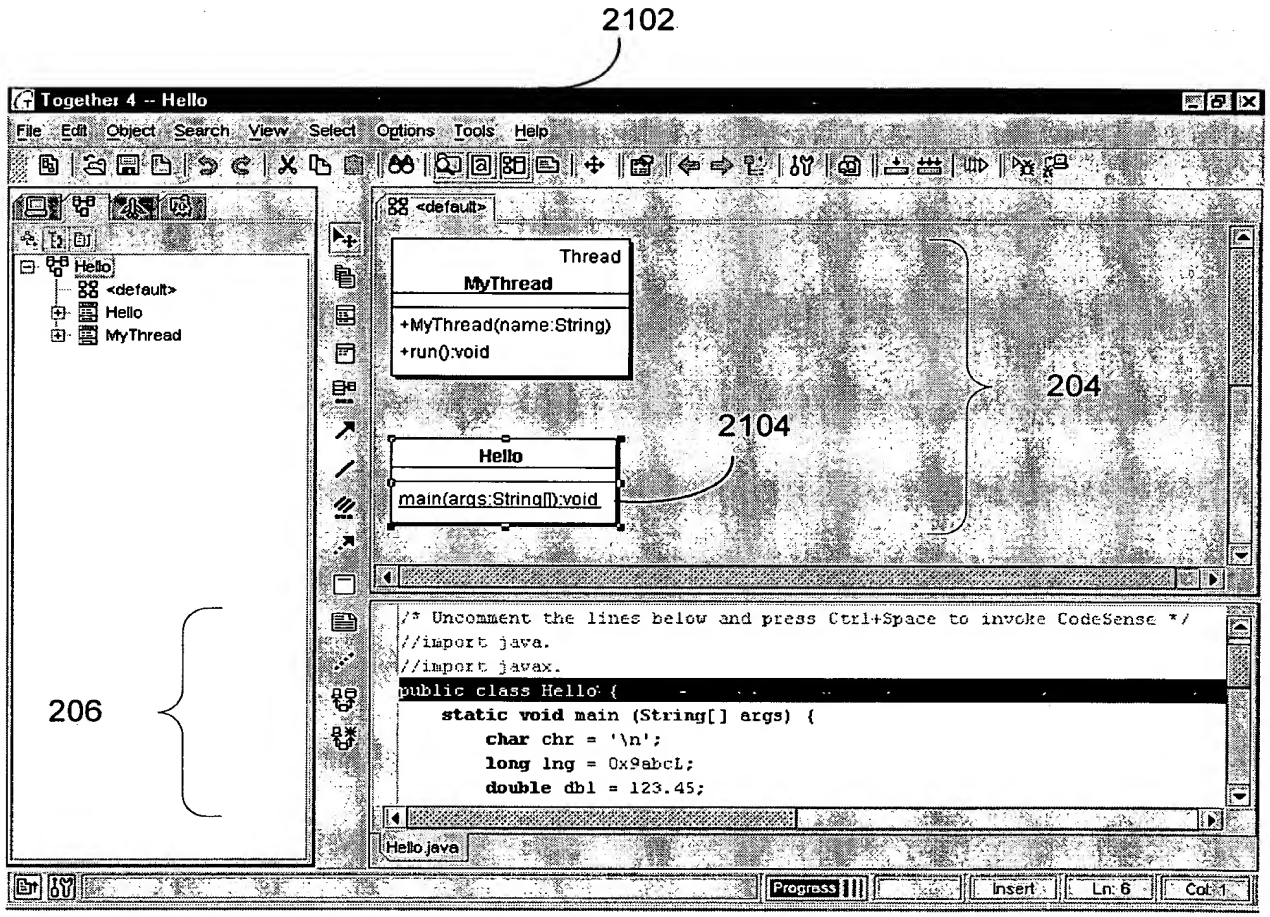
2102
Together 4 -- Hello
File Edit Object Search View Select Options Tools Help
Hello
<default>
Hello
MyThread
<default>
Thread
MyThread
+MyThread(name:String)
+run():void
Hello
main(args:String[]):void
2104
204
206
/* Uncomment the lines below and press Ctrl+Space to invoke CodeSense */
//import java.
//import javax.
public class Hello {
static void main (String[] args) {
char chr = '\n';
long lng = 0x9abcL;
double dbl = 123.45;
Hello.java
Progress
Insert
Ln: 6
Col: 1

FIG. 21

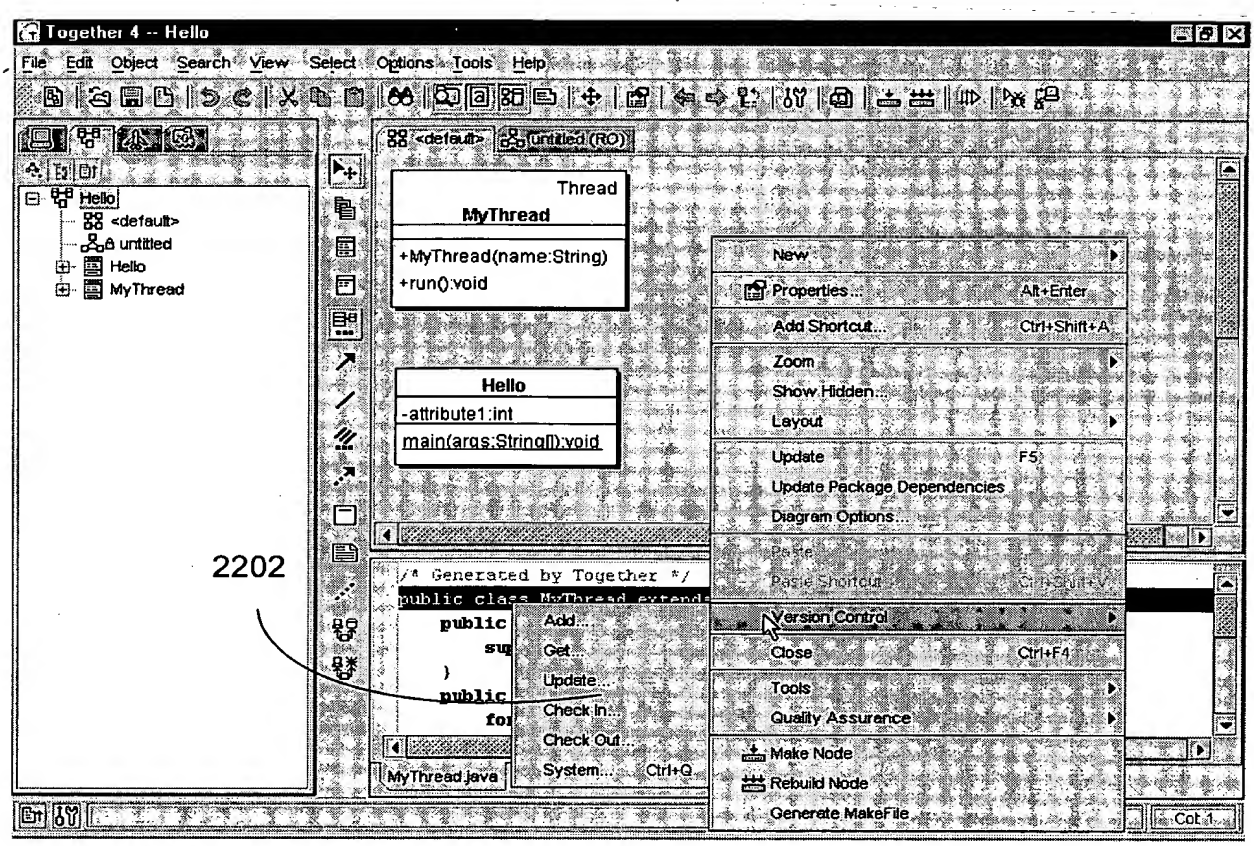
Together 4 -- Hello
File Edit Object Search View Select Options Tools Help
Hello
<default>
untitled
Hello
MyThread
<default>
untitled (RO)
Thread
MyThread
+MyThread(name:String)
+run():void
Hello
-attribute1:int
main(args:String[]):void
2202
/* Generated by Together */
public class MyThread extends
public
Add...
Get...
Update...
Check In...
Check Out...
System... Ctrl+Q
MyThread.java
New
Properties... Alt+Enter
Add Shortcut... Ctrl+Shift+A
Zoom
Show Hidden...
Layout
Update F5
Update Package Dependencies...
Diagram Options...
Paste
Paste Shortcut Ctrl+Shift+V
Version Control
Close Ctrl+F4
Tools
Quality Assurance
Make Node
Rebuild Node
Generate MakeFile...
Col 1

FIG. 22

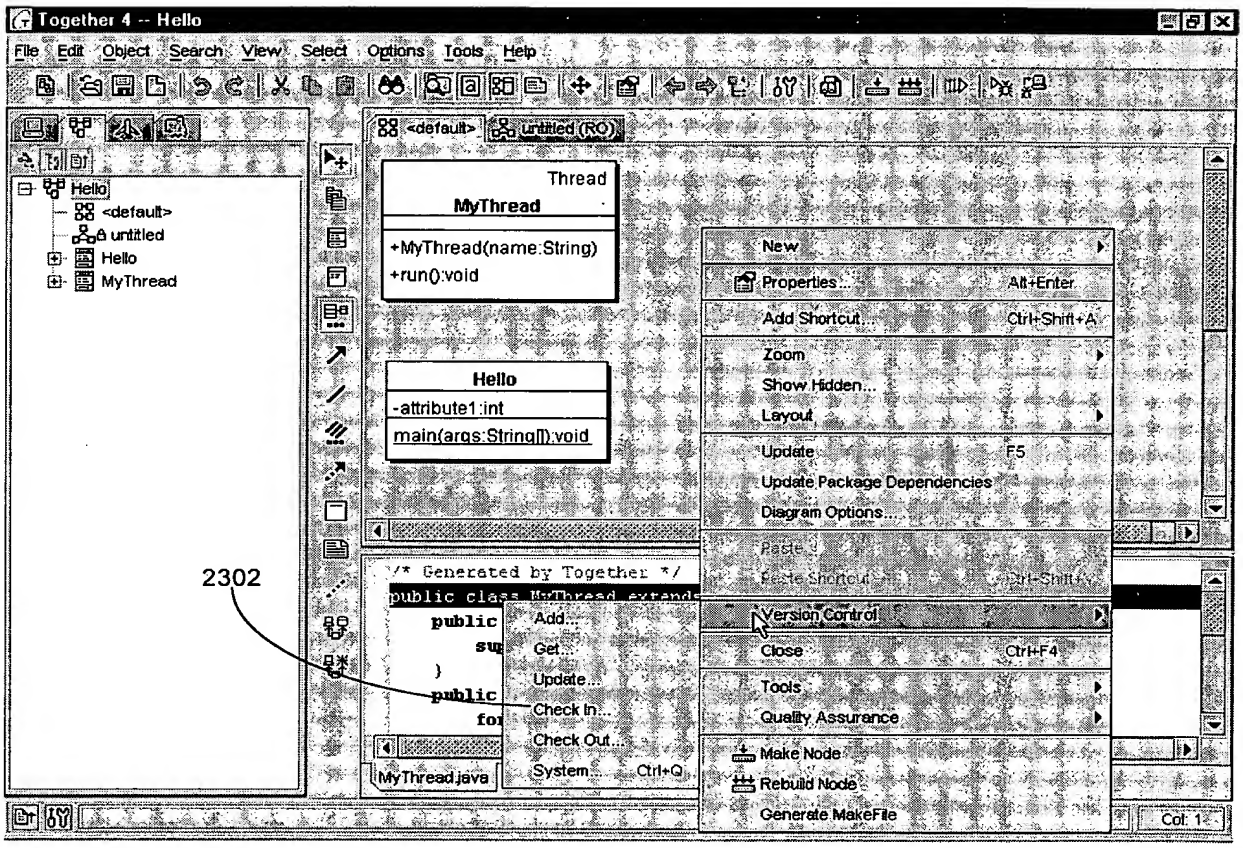
Together 4 -- Hello
File Edit Object Search View Select Options Tools Help
Hello
<default>
untitled
Hello
MyThread
<default>
untitled (RO)
Thread
MyThread
+MyThread(name:String)
+run():void
Hello
-attribute1:int
main(args:String[]):void
New
Properties... Alt+Enter
Add Shortcut... Ctrl+Shift+A
Zoom
Show Hidden...
Layout
Update F5
Update Package Dependencies
Diagram Options...
Paste
Paste Shortcut Ctrl+Shift+V
Version Control
Close Ctrl+F4
Tools
Quality Assurance
Make Node
Rebuild Node
Generate MakeFile
/* Generated by Together */
public
Add...
Get...
Update...
Check In...
Check Out...
System Ctrl+Q
MyThread.java
Col: 1
2302

FIG. 23

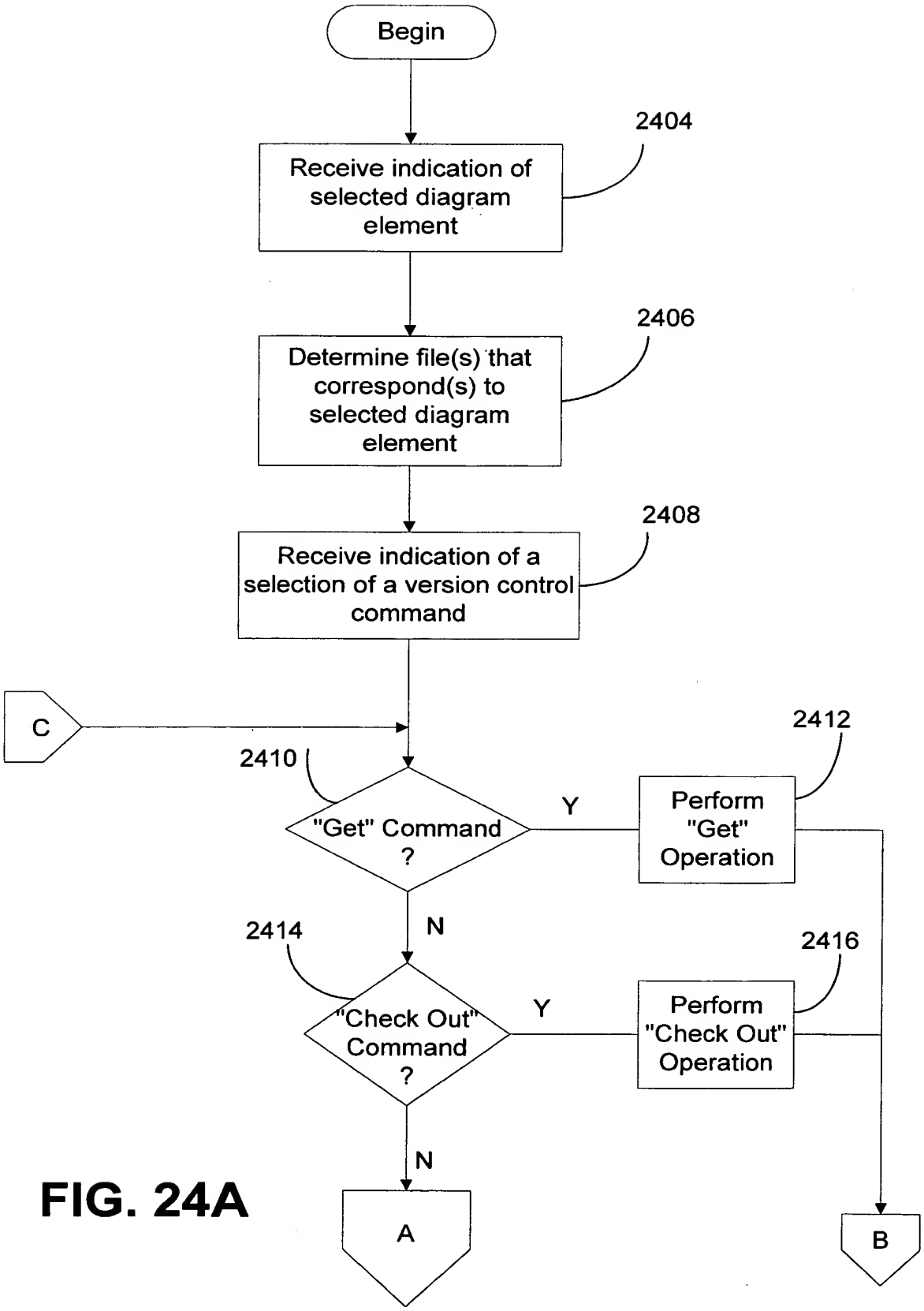
Begin
2404
Receive indication of selected diagram element
2406
Determine file(s) that correspond(s) to selected diagram element
2408
Receive indication of a selection of a version control command
C
2410
"Get" Command ?
Y
2412
Perform "Get" Operation
N
2414
"Check Out" Command ?
Y
2416
Perform "Check Out" Operation
N
A
B

FIG. 24A

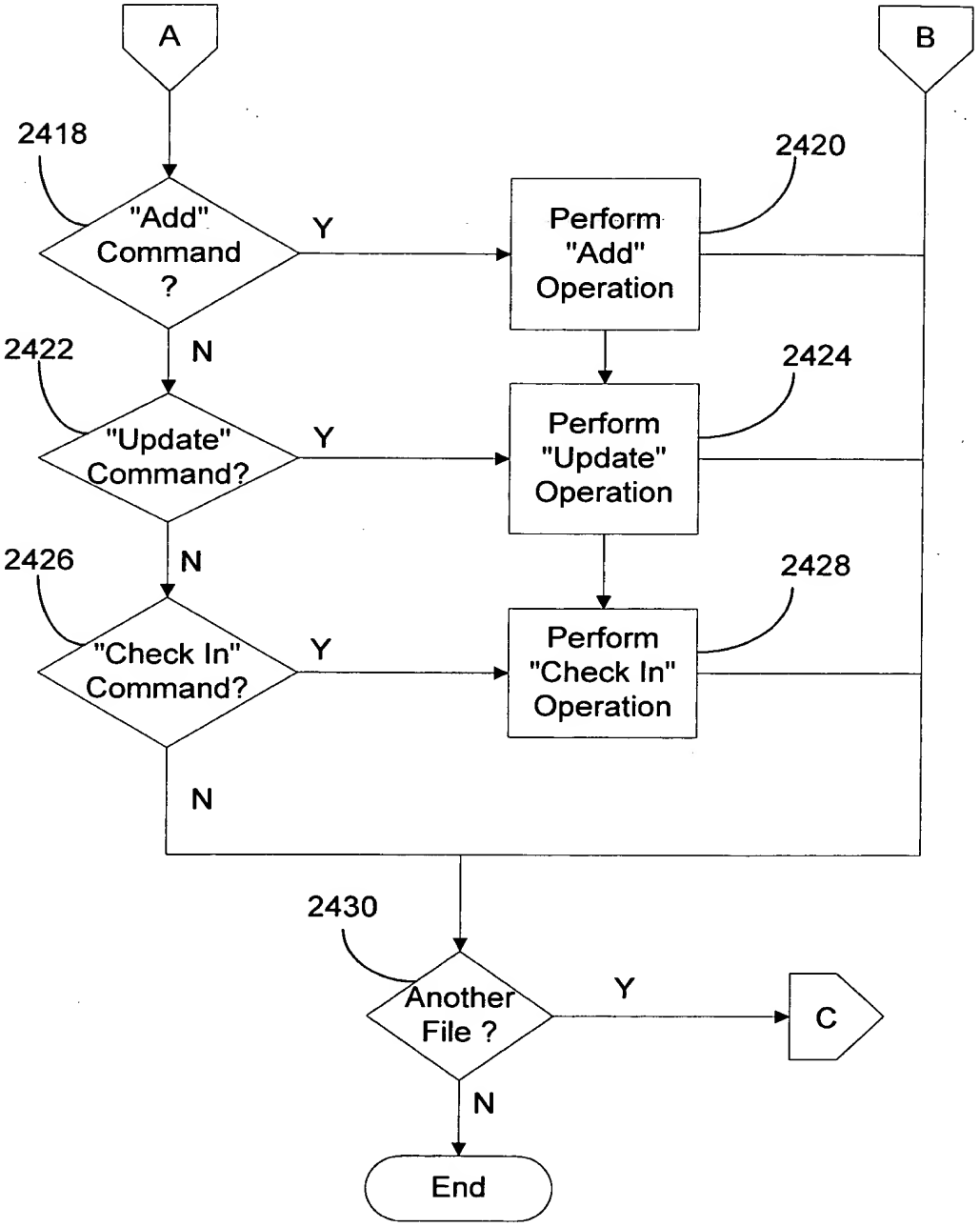
A
B
2418
"Add" Command ?
Y
2420
Perform "Add" Operation
N
2422
"Update" Command?
Y
2424
Perform "Update" Operation
N
2426
"Check In" Command?
Y
2428
Perform "Check In" Operation
N
2430
Another File ?
Y
C
N
End

FIG. 24B